tracer2000

Network Digital Video Recorder

Hardware User's Manual

Giantec Inc.

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Table of Contents

Chapter I　　　**Introduction**

Thank you for purchasing tracer2000 DVR; this manual will guide you through the setup, installation, and use of all our tracer2000 systems.

Before proceeding, please read this manual thoroughly!
If you have any questions or concerns that cannot be solved by following this manual, please visit our web site at http://www.giantec.net or for technical issue please contact to our technical support center at service@giantec.com.tw.

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Function Introduction

Thank you for using tracer2000 video surveillance system.　tracer can be used to transfer captured video signal from analog to digital using the compression format for record and play. They can also capture videos of up to 4 / 8 / 16 cameras for model tracer2404, tracer2408 and trcer2416 (4 / 8 / 16 BNC inputs) with 4 audio sources at the same time.　The built-in video player makes it easy to play back recorded video files.　The system also provides several control modes like motion detection, schedule record, P/T/Z control and remote surveillance applications.　About detail function describe, please reference tracer2000 software manual.

Features

The tracer2000 comes with the following hardware devices:

- Control Panel with IR Receiver
- One 10/100Mbps TX Fast Ethernet with RJ-45 Connector
- One RS232 and one RS232/422/485 Selectable Interface
- One VGA (DB-15) Connector
- One Speaker Out
- One Microphone In
- Two USB Ports (USB 1.1 Interface)
- Two 3.5″ HDD Supported
- Four Audio-in Ports
- Eight GPIO Ports
- Support IR Controller to Remote Control tracer2000
- Working Temperature: 0°C ~ 40°C
- Storage Temperature: -10°C ~ 65°C
- Relative Humidity: Maximum 85%, non-condensing
- Power Requirement: AC100 ~ 240V, 50 / 60Hz, 150W Maximum
- Dimension: 265mm (D) x 321mm (W) x 103mm (H)
- Weight: 5.0kg

Chapter II	Package

Check the accessories accompany with the system you purchase as listed below.   With newer package release, the accessories are compacted into an accessory box.   Please check the items and contact to your dealer you bought from if any of them is missing.

- tracer2000 System
- Power Cord
- Screws Pack
- Remote Controller
- Battery (AAA) x 2
- tracer2000 Software User's Manual
- tracer2000 Hardware User's Manual
- Installation CD-ROM

Please keep the packaging materials.   You may need them for the use of further service.

Chapter III   Installation

Alarm   Menu   Display   Playback   Power/HDD LED   Confirm   IR

Removable Air Filter Bracket

UP
LEFT   RIGHT
DOWN

Removable Air Filter Bracket
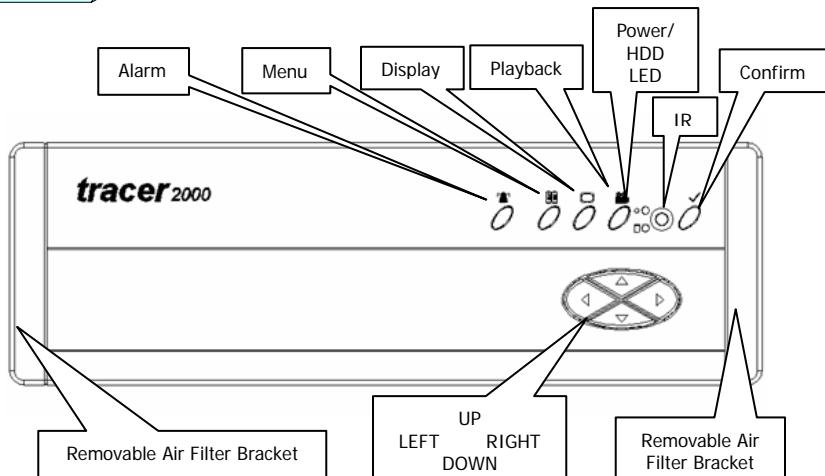
Remove and clean up Air Filters monthly is essential.

Front Panel View

Power Supply   Parallel Port   GPIO   Audio   BNC Connector   MIC and Speaker Out

COM1   VGA   USB Ports x 2   COM2   10/100 Ethernet Port
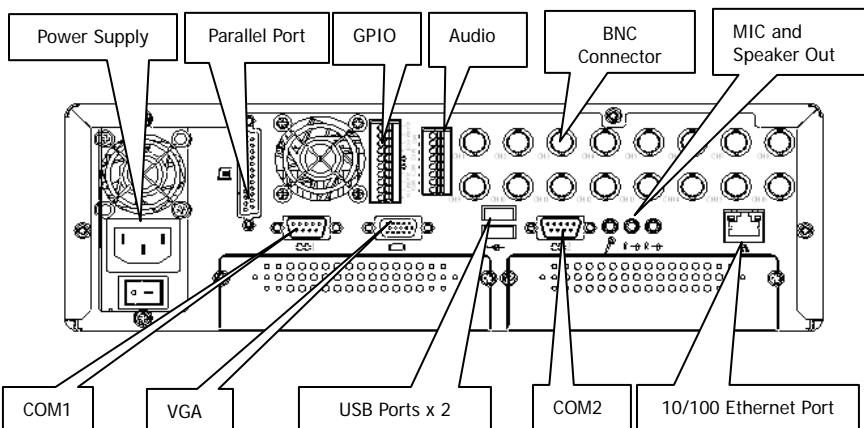
Rear Panel View

1. Indicator

Power LED: The green light shows power is on.
H.D.D. LED: The green light flash is HDD working.

H.D.D
LED

2. Cable Connection

Following is the basic device must be prepared before to start installation complete system.

1. tracer2000
2. CCD Cameras
3. VGA Monitor

Please follow the procedure to connect the cable.

2.1 Connect VGA Monitor

2.2   Connect Camera Cable to BNC Connector

2.3   Connect to LAN Connector: Plug RJ-45 Connector to LAN Port
Insert RJ-45 cable to network LAN socket on the rear of tracer2000.

2.4   Connect to Printer Port (Option)

There are two types of printer port.   One is LPT the other is USB.   Connect port as show as below:

USB Port
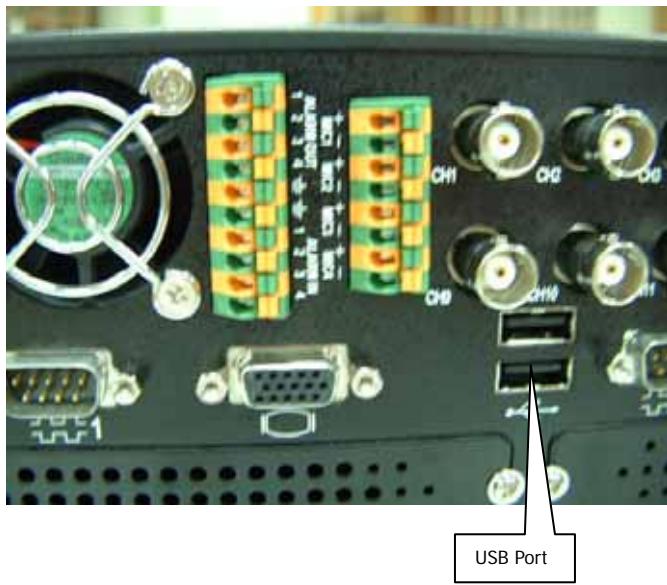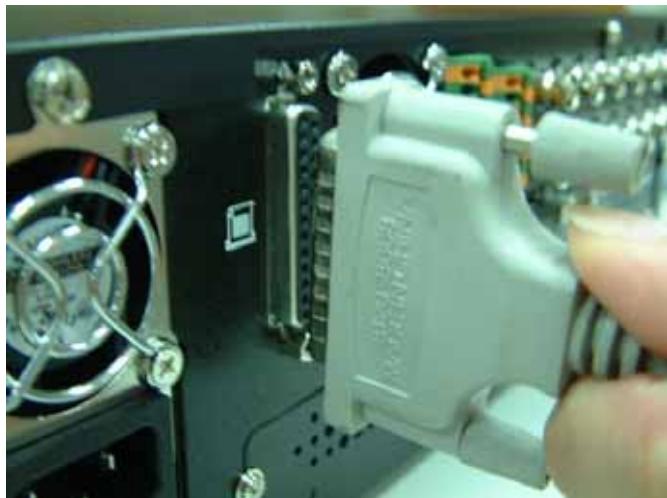
3. Power Connector

3.1 Connect Power Cord (110V ~ 240V Auto Switch) into the Power Socket

Press "I" to start up system and then you can see the power LED will be light in front of panel.

Pushes switch "I" to turn it on.
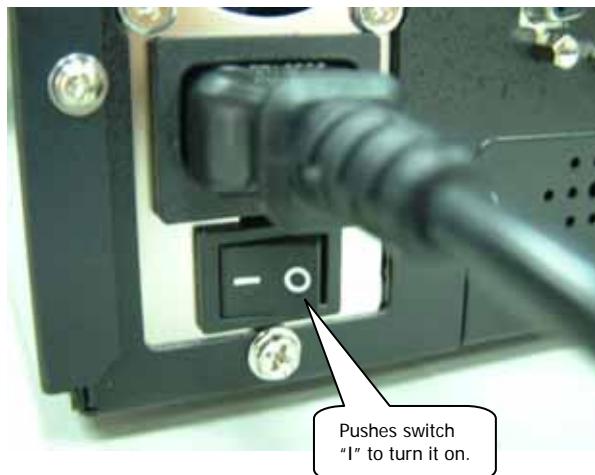
Chapter IV   **Pin Assignment**

1.   Internal Jumpers and Connectors
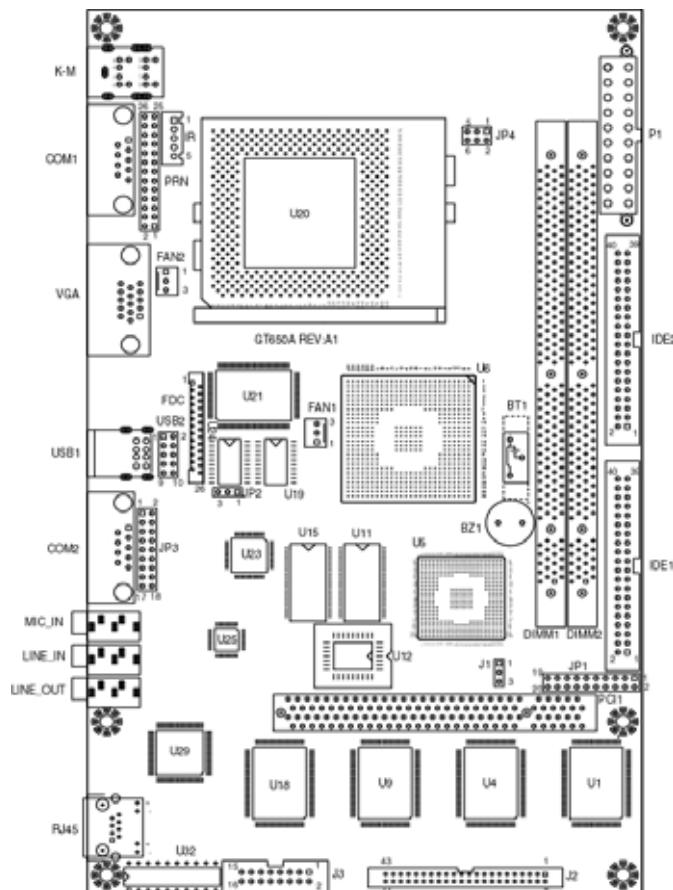
1.1 Power Switch for ATX Power Supply (JP1)

Signals	JP1
Power ON/OFF	1-3

1.2 Reset / LED / Speaker (JP1)

Signals	JP1
Power LED, Pin9+, Pin10-	9-10
External Speaker	14-20
HDD LED, Pin8+, Pin7-	7-8
System Reset Switch	5-6
SUSLED Pin4+, Pin2-	2-4

P.S.   For the AT system (short Pin10 & Pin12) for power on.

1.3 Internal USB Connector (USB2)

Signals	USB2-1	USB2-2
Power	1	10
Data-	3	8
Data+	5	6
USB GND	7	4
CHS GND	9	2

1.4 Power Connector (P1)

Signals	P1
+12V	10
+5V	4, 6, 19, 20
-12V	12
-5V	18
+3.3V	1, 2, 11
5VSB	9
PS-ON	14
POWER-OK	8
Ground	3, 5, 7, 13, 15, 16, 17

1.5 CMOS Clear (J1)

J1
POWER OFF and Move JUMPER from Pin1-2 to Pin2-3 of J1, Reminding POWER OFF 1 Minute. The Move JUMPER Back to 1-2 of J1

1.6   COM2 Mode Select (JP3)

Mode	JP3
RS232	3-5, 4-6, 9-11, 10-12, 17-18
RS422	1-3, 2-4, 7-9, 8-10, 15-16
RS485	1-3, 2-4, 7-9, 8-10, 13-14

1.7   CPU FSB Select (JP4)

Function	JP4
Auto by CPU	1-3, 2-4
66MHz	3-5, 4-6

1.8   FAN Control (FAN1, 2)

Function	FAN1, 2
Sense	3
+12V	2
PWM Control	1

1.9   HDD Connector (IDE1, 2)
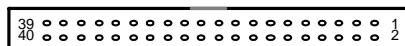
Pin No.	Signal	Pin No.	Signal
1	-RST	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	N.C.
21	REQ	22	GND
23	IOW	24	GND
25	IOR	26	GND
27	IORDY	28	GND
29	DACK	30	GND
31	IRQ	32	N.C.
33	A1	34	PDIAG
35	A0	36	A2
37	CS0	38	CS1
39	-ACT	40	GND

1.10 Parallel / Printer Connector (PRN)
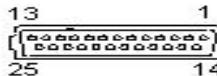
Pin No.	Signal	Pin No.	Signal
1	Strobe	10	-Acknowledge
2	Data 0	11	Busy
3	Data 1	12	Paper Empty
4	Data 2	13	+Select
5	Data 3	14	-Auto Feed
6	Data 4	15	-Error
7	Data 5	16	-INIT Printer
8	Data 6	17	-Select Input
9	Data 7	18-25	Ground

1.11 Video Input (J2)

Pin No.	Signal	Pin No.	Signal
1	VCC	2	V-I-OE00
3	GND	4	V-I-OE01
5	VIN00	6	V-I-OE02
7	VIN01	8	V-I-OE03
9	VIN02	10	AGND
11	VIN03	12	V-I-OE30
13	AGND	14	V-I-OE31
15	VIN30	16	V-I-OE32
17	VIN31	18	V-I-OE33
19	VIN32	20	AGND
21	VIN33	22	V-I-OE20
23	AGND	24	V-I-OE21
25	VIN20	26	V-I-OE22
27	VIN21	28	V-I-OE23
29	AGND	30	AGND
31	VIN22	32	V-I-OE10
33	VIN23	34	V-I-OE11
35	AGND	36	V-I-OE12
37	VIN10	38	V-I-OE13
39	VIN11	40	AGND
41	VIN12	42	GND
43	VIN13	44	VCC

Note: VIN xx is analog video input channel xx.

V-I-OExx is Odd / Even field information of video input channel xx.

1.12 General Purpose Input / Output (J3)
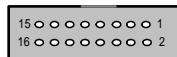
Pin No.	Signal	Pin No.	Signal
1	GPIO-0	2	Audio IN3
3	GPIO-1	4	AGND
5	GPIO-2	6	Audio IN2
7	GPIO-3	8	AGND
9	GPIO-4	10	Audio IN1
11	GPIO-5	12	AGND
13	GPIO-6	14	Audio IN0
15	GPIO-7	16	GND (for GPIO)

1.13 Infra-Red (IR)
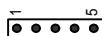
Pin No.	Signal
1	VCC
2	IRRX
3	GND
4	IRTX
5	CIRRX

1.14 PCI Bus Pin Assignment
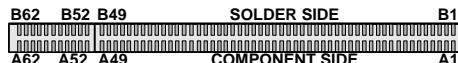
Pin No.	A	B	Pin No.	A	B
1	TRST*	-12V	32	AD16	AD17
2	+12V	TCK	33	VCC3	C/BE2*
3	NC	GND	34	FRAME*	GND
4	NC	NC	35	GND	IRDY*
5	+5V	+5V	36	TRDY*	VCC3
6	INTA*	+5V	37	GND	DEVSEL*
7	INTC*	INTB*	38	STOP*	GND
8	+5V	INTD*	39	VCC3	LOCK*
9	NC	PREN1*	40	SDONE	PERR*
10	+5V	NC	41	SBO*	VCC3
11	NC	PREN2*	42	GND	SERR*
12	GND	GND	43	PAR	VCC3
13	GND	GND	44	AD15	C/BE1*
14	3VSB	NC	45	VCC3	AD14
15	RST*	GND	46	AD13	GND
16	+5V	CLK	47	AD11	AD12
17	GNT0*	GND	48	GND	AD10
18	GND	REQ0*	49	AD9	GND
19	PME*	+5V	50	KEY	KEY
20	AD30	AD31	51	KEY	KEY
21	VCC3	AD29	52	C/BE0*	AD8
22	AD28	GND	53	VCC3	AD7
23	AD26	AD27	54	AD6	VCC3
24	GND	AD25	55	AD4	AD5
25	AD24	VCC3	56	GND	AD3
26	AD16	C/BE3*	57	AD2	GND
27	VCC3	AD23	58	AD0	AD1
28	AD22	GND	59	+5V	+5V
29	AD20	AD21	60	REQ64*	ACK64*
30	GND	AD19	61	+5V	+5V
31	AD18	VCC3	62	+5V	+5V

2. External Connector

2.1 CRT Display Connector (VGA)
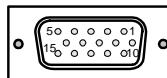
Pin No.	Signal	Pin No.	Signal
1	RED	9	Key
2	GREEN	10	GND
3	BLUE	11	N/C
4	N/C	12	DCDA
5	GND	13	H-SYNC
6	GND	14	V-SYNC
7	GND	15	DCDA
8	GND		

2.2 Audio Input Connector
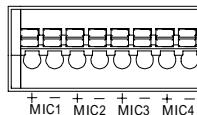
2.3 GPIO Connector
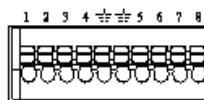
2.4 USB Connector

USB Ports	
Pin	Name
2	USB0-
3	USB0+
4, 8	GND
1, 5	USB Power
6	USB1-
7	USB1+

2.5 COM1 Connector
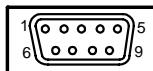
RS232 Connector (COM1)

Pin No.	Signal
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

2.6 COM2 Connector
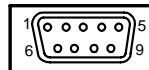
RS232 / RS422 / RS485 Connector (COM2)

Pin No.	RS232	RS422	RS485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	
4	DTR	RX-	
5	GND	GND	GND
6	DSR	RTS-	
7	RTS	RTS+	
8	CTS	CTS+	
9	RI	CTS-	

Note: Please setup mode type by JP3.

3. Ethernet Connector (RJ-45)

Drawing of Ethernet Connector RJ-45

Pin No.	Signal
1	TX+
2	TX-
3	RX+
4	NC
5	NC
6	RX-
7	NC
8	NC

3.1 Connectors

The connectors allow this main board to connect with other parts of the system. Some problems encountered with your system may be caused by loose or improper connections. Ensure that all connectors are in place and firmly attached.

Component	Label
HDD (IDE) Connector	IDE1, IDE2
Slim FDD Connector	FDC
Internal USB Connector	USB2
Reset Switch Connector	JP1 (6-5)
External Speaker Connector	JP1 (14-20)
HDD LED Connector	JP1 (7-8)
External Power Connector	P1
Serial Port	COM1, 2
Audio OUT	LINE_OUT
Audio IN	LINE_IN
MIC	MIC_IN
LAN	RJ-45
Video INPUT	J2
CMOS RAM Clear	J1
Audio / GPIO	J3
IR	IR
CPU FAN	FAN1, 2
Printer	PRN

3.2 P/T/Z Setting

The P/T/Z Setting complies with LILIN or PELCO.   Protocol has been previously attached to the COM ports.   You may control the camera via arrow buttons. In this case, you don't need to buy dedicated P/T/Z controller.

3.3 Pin Assignment of COM2

Connect 9 PIN Female D_SUB to COM2 (Pin defines as below).
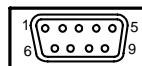
RS232 / RS422 / RS485 Connector (COM2)

Pin No.	RS232	RS422	RS485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	
4	DTR	RX-	
5	GND	GND	GND
6	DSR	RTS-	
7	RTS	RTS+	
8	CTS	CTS+	
9	RI	CTS-	

Note: Please setup mode type by JP3.

3.4 Cable Connection

Camera input jack to COM2 for PIH-7000/7600.   For example:
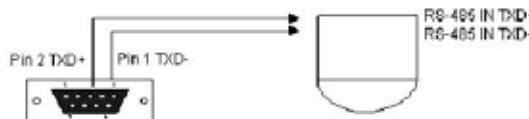
3.5 Jumper 3 Setting of COM2

The system default of COM2 is RS485.   Adjust jumper JP3 in system for RS422, RS232 signals as show below.
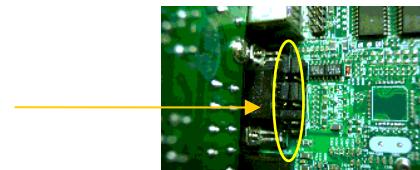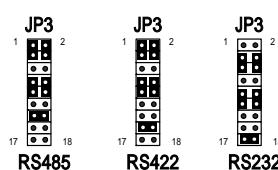
Chapter V	CMOS Setting

1. Introduction

This manual discusses Award^{TM} setup program built into the ROM BIOS.   The setup program allows users to modify the basic system configuration.   This special information is then stored in battery-backed RAM so that it retains the setup information when the power is turned off.

If system behaviors abnormal situation and you wish to check hardware values of CMOS, you may connect a USB keyboard, restart the system by turning it OFF then ON or pressing the "RESET" button on the system case.   You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.   Press <Delete> key to enter CMOS setting pages.

2. Setup Pages

Phoenix-Award BIOS CMOS Setup Utility.

Standard CMOS Feature	Frequency / Voltage Control
Advanced BIOS Feature	Load Optimized Defaults
Advanced Chipset Feature	Set Supervisor Password
Integrated Peripherals	Set User Password
Power Management Setup	Save & Exit Setup
PnP / PCI Configurations	Exit Without Saving
PC Health Status	
Esc: Quit F9: Menu in BIOS ↑ ↓ ← →: Select Item F10: Save & Exit Setup	
Time, Date, Hard Disk Type.	

2.1   Standard CMOS Features

Use this menu for basic system configuration.

Date:	Mon., Feb 8 1999	Item Help
Time:	16:19:20	
		Menu Level ➢
IDE Primary	2557MB	
Master	None	Change the day, month, year and
IDE Primary	None	century.
Slave	None	
IDE Secondary		
Master	None	
IDE Secondary	None	
Slave		
	EGA/VGA	
Drive A	No Errors	
Drive B		
	640 K	
Video	64512 K	
Halt On	65536 K	
Based Memory		
Extended		
Memory		
Total Memory		
↑↓←→Move	Enter: Select	+/-/PU/PD: Value
F10: Save	ESC: Exit	F1: General Help
F5: Previous Values	F6: Fail-safe Defaults	F7: Optimized Defaults

2.2 Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

		Item Help
Virus Warning	Disabled	
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level ➢
CPU L2 Cache ECC Checking	Enabled	
Quick Power On Self Test	Disabled	Allows you to choose the VIRUS
First Boot Device	HDD-0	warning feature for IDE Hard Disk
Second Boot Device	HDD-1	boot sector protection. If this
Third Boot Device	CD-ROM	function is enabled and someone
Boot Other Device	Enabled	attempt to write data into this
Boot Up NumLock Status	On	area, BIOS will show a warning
Gate A20 Option	Fast	message on screen and alarm
Typematic Rate Setting	Disabled	beep.
xTypematic Rate (Chars/Sec)	6	
xTypematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report NO FDD for Win95	Yes	
↑↓←→Move Enter: Select		+/-/PU/PD: Value
F10: Save ESC: Exit		F1: General Help
F5: Previous Values F6: Fail-safe Defaults		F7: Optimized Defaults

2.3   Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Virus Warning	Disabled	Item Help
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level ➤
CPU L2 Cache ECC Checking	Enabled	
Quick Power On Self Test	Disabled	Allows you to choose the VIRUS
First Boot Device	HDD-0	warning feature for IDE Hard Disk
Second Boot Device	HDD-1	boot sector protection. If this
Third Boot Device	CD-ROM	function is enabled and someone
Boot Other Device	Enabled	attempt to write data into this
Boot Up NumLock Status	On	area, BIOS will show a warning
Gate A20 Option	Fast	message on screen and alarm
Typematic Rate Setting	Disabled	beep.
xTypematic Rate (Chars/Sec)	6	
xTypematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report NO FDD for Win95	Yes	
↑↓←→Move	Enter: Select	+/-/PU/PD: Value
F10: Save	ESC: Exit	F1: General Help
F5: Previous Values	F6: Fail-safe Defaults	F7: Optimized Defaults

SDRAM CAS Latency Time	3	Item Help
SDRAM Cycle Time Tras/Trc	7/9	
SDRAM RAS-to-CAS Delay	3	Menu Level
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole at 15M ~ 16M	Disabled	
CPU Latency Timer	Enabled	
Delay Transaction	Enabled	
AGP Graphics Aperture Size	64MB	
Display Cache Frequency	100MHz	
System Memory Frequency	Auto	
On-chip Video Window Size	64MB	
* Onboard Display Cache Setting *		
CAS# Latency	3	
Paging Mode Control	Open	
RAS-to-CAS Override	By CAS# LT	
RAS# Timing	Fast	
RAS# Precharge Timing	Fast	

↑↓←→Move	Enter: Select	+/-/PU/PD: Value
F10: Save	ESC: Exit	F1: General Help
F5: Previous Values	F6: Fail-safe Defaults	F7: Optimized Defaults

2.4   Integrated Peripherals

Use this menu to specify your setting for integrated peripherals.

		Item Help
OnChip Primary PCI IDE	Enabled	
OnChip Secondary PCI IDE	Enabled	
IDE Primary Master PIO	Auto	Menu Level ➢
IDE Primary Slave PIO	Auto	
IDE Secondary Master PIO	Auto	If your IDE hard drive supports
IDE Secondary Slave PIO	Auto	block mode select Enabled for
IDE Primary Master UDMA	Auto	automatic detection of the optimal
IDE Primary Slave UDMA	Auto	number of block read / write per
IDE Secondary Master UDMA	Auto	sector the drive can support.
IDE Secondary Slave UDMA	Auto	
USB Controller	Enabled	
USB Keyboard Support	Enabled	
USB Mouse Support	Disabled	
Init Display	Onboard / AGP	
AC97 Audio	Auto	
IDE HDD Block Mode	Enabled	
Power On Function	Button Only	
xKB Power On Password	Enter	
xHot Key Power On	Ctrl-F1	
Onboard Serial Port 1	3F8 / IRQ4	
Onboard Serial Port 2	2F8 / IRQ3	
UART Mode Select	Normal	
xRxD, TxD Active	Hi, Lo	
xIR Transmission Delay	Enabled	
xUR2 Duplex Mode	Half	
xUse IR Pins	IR-Rx2Tx2	
Onboard Parallel Port	378 / IRQ7	
Parallel Port Mode	SPP	
EPP Mode Select	EPP1.7	
ECP Mode Use DMA	3	
PWRON After PWR-Fail	Off	
Watch Dog Timer Select	Disable	
↑↓←→Move	Enter: Select	+/-/PU/PD: Value
F10: Save	ESC: Exit	F1: General Help
F5: Previous Values	F6: Fail-safe Defaults	F7: Optimized Defaults

2.5 Power Management Setup

Use this menu to specify your settings for power management.

ACPI Function	Disabled	Item Help
ACPI Suspend Type	S1 (POS)	
Power Management	User Define	Menu Level ➢
Video Off Method	DPMS	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Modem Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-off by PWR-BTTN	Instant-off	
Wake-up by PCI Card	Disabled	
Power On By Ring	Enabled	
USB KB Wake-up From S3	Disabled	
PWRON After PWR-Fail	Former-sts	
CPU Thermal-throttling	50.0%	
Resume by Alarm	Disabled	
X Date (of Month) Alarm	0	
X Time (hh: mm: ss) Alarm	0 0 0	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT Port	Disabled	
PCI PIRQ [A-D]#	Disabled	

↑↓←→Move	Enter: Select	+/-/PU/PD: Value
F10: Save	ESC: Exit	F1: General Help
F5: Previous Values	F6: Fail-safe Defaults	F7: Optimized Defaults

2.6 PnP / PCI Configuration

This entry appears if your system supports PnP / PCI.

		Item Help
Reset Configuration Data	Disabled	
Resources Controlled By X IRQ	Auto (ESCD)	Menu Level ➢
Resources	Press Enter	
PCI / VGA Palette Snoop	Disabled	Default is Disabled. Select
		Enabled to reset Extended System
		Configuration Data (ESCD) when
		you exit Setup if you have
		installed a new add-on and the
		system reconfiguration has
		caused such a serious conflict that
		the OS cannot boot.
↑↓←→Move	Enter: Select	+/-/PU/PD: Value
F10: Save	ESC: Exit	F1: General Help
F5: Previous Values	F6: Fail-safe Defaults	F7: Optimized Defaults

2.7 PC Health Status

Use this menu to monitor the CPU and system temperature, CPU fan speed the voltage of the onboard regulators.

		Item Help
CPU Warning Temperature	Disabled	
Current System Temperature		
Current CPU1 Temperature		Menu Level ➢
IN0(V)		
IN1(V)		
IN2(V)		
+5V		
VBAT(V)		
5VSB(V)	Disabled	
Shutdown Temperature		
↑↓←→Move	Enter: Select	+/-/PU/PD: Value
F10: Save	ESC: Exit	F1: General Help
F5: Previous Values	F6: Fail-safe Defaults	F7: Optimized Defaults

2.8   Frequency / Voltage Control
Use this menu to specify your settings for frequency / voltage control.

Auto Detect DIMM / PCI CLK Enabled	Item Help
Spread Spectrum Disabled	Menu Level ➢
↑↓←→Move Enter: Select +/-/PU/PD: Value	
F10: Save ESC: Exit F1: General Help	
F5: Previous Values F6: Fail-safe Defaults F7: Optimized Defaults	

2.9   Load Optimized Defaults
Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.   While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Load Optimized Defaults (Y/N)? N

Pressing "Y" loads the default values that are factory settings for optimal performance system operations.

2.10   Supervisor / User Password
Use this menu to set User and Supervisor Passwords.

2.11   Save & Exit Setup
Save CMOS value changes to CMOS and exit setup.

2.12   Exit Without Save
Abandon all CMOS value changes and exit setup.

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| Chapter VI | System HDD Installation Guide |

Follow the step to setup HDD drawing box.

**1. Remove the screws on the case. (Marked in while circles)**
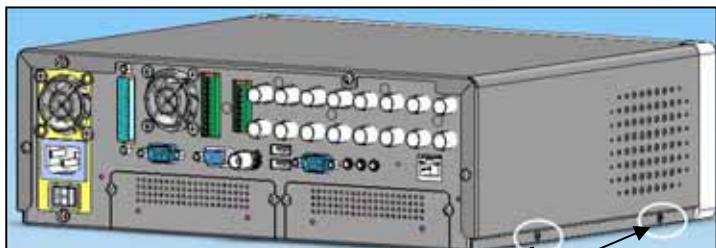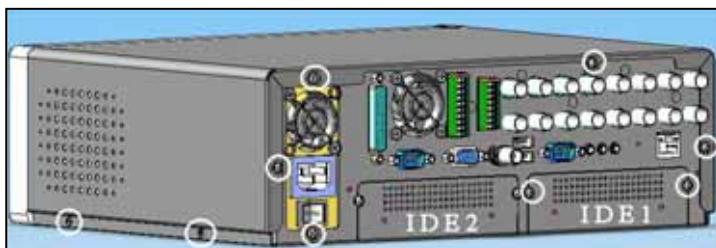
Remove the screws on the case.

**2. Take off the upper cover and remove the screws.**
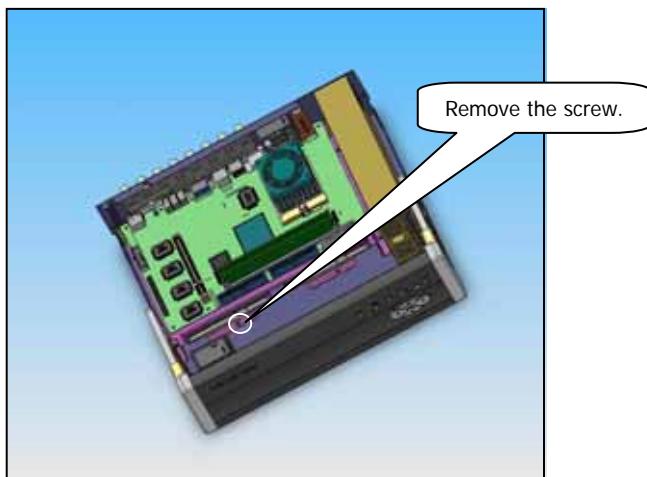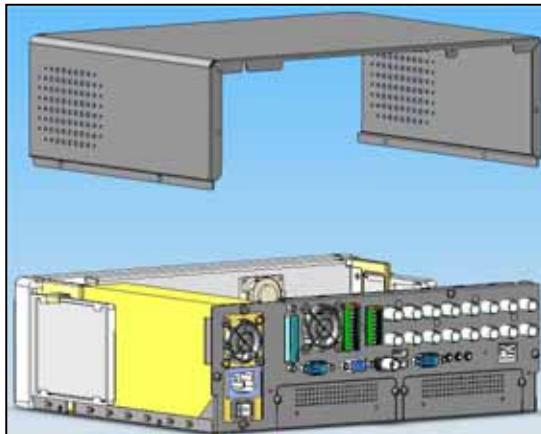
Remove the screw.

3. Remove HDD tray, and install HDD properly.
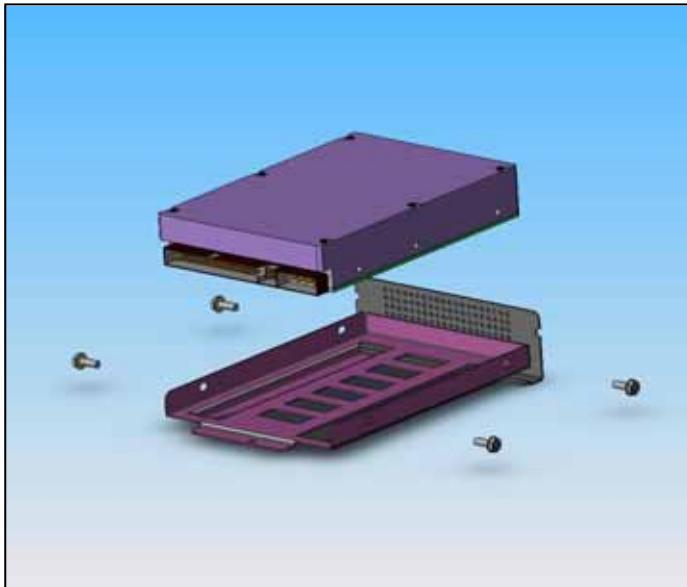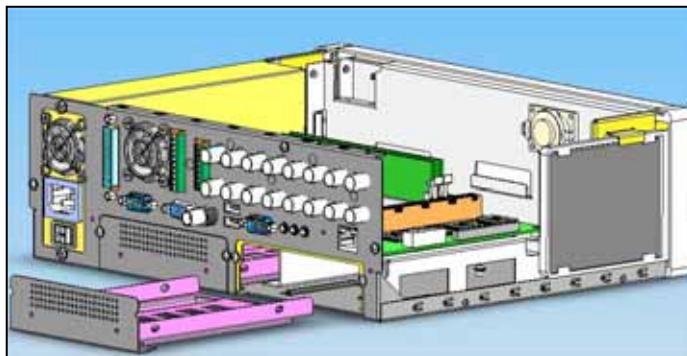
4. **Insert the assembled HDD tray into tracer2000, and connect both power and HDD.**
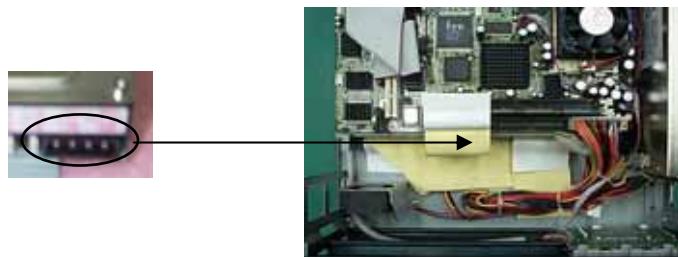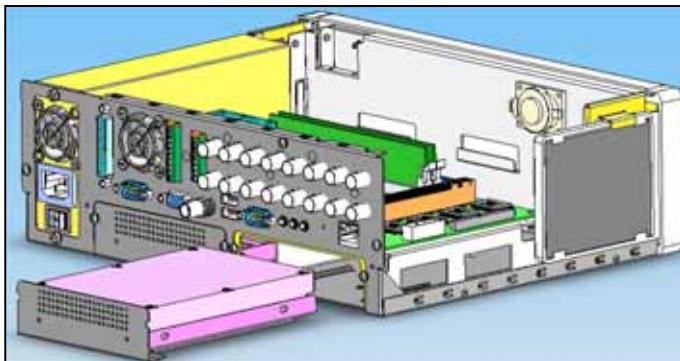
5. **Assemble the upper cover and the screws.**